

# **2011 Information Security for South Africa**

**(ISSA 2011)**

**Johannesburg, South Africa  
15 – 17 August 2011**

**Editors:**

**H. S. Venter  
M. Coetzee**

**M. Loock**



**IEEE Catalog Number: CFP1166I-PRT  
ISBN: 978-1-49; ;/38; 8/4**

# TABLE OF CONTENTS

<b>A Web-Based Information Security Management Toolbox For Small-To-Medium Enterprises In Southern Africa</b> .....	1
<i>J. Coertze, J. Niekerk, R. Solms</i>	
<b>Guidelines For The Creation Of Brain-Compatible Cyber Security Educational Material In Moodle 2.0</b> .....	9
<i>R. Reid, J. Niekerk, R. Solms</i>	
<b>Efficient Enforcement of Dynamic Cryptographic Access Control Policies for Outsourced Data</b> .....	17
<i>A. Kayem, P. Martin, S. Akl</i>	
<b>A Visualization and Modeling Tool for Security Metrics and Measurements Management</b> .....	25
<i>R. Savola, P. Heinonen</i>	
<b>Secure Cloud Computing: Benefits, Risks and Controls</b> .....	33
<i>M. Carroll, A. Merwe, P. Kotze</i>	
<b>Online Social Networks: Enhancing User Trust Through Effective Controls And Identity Management</b> .....	42
<i>R. Galpin, S. Flowerday</i>	
<b>Implementing Rootkits to Address Operating System Vulnerabilities</b> .....	50
<i>M. Corregedor, S. Solms</i>	
<b>Information Security Governance Control Through Comprehensive Policy Architectures</b> .....	58
<i>R. Solms, K. Thomson, M. Maninjwa</i>	
<b>Detecting Scareware by Mining Variable Length Instruction Sequences</b> .....	64
<i>R. Shahzad, N. Lavesson</i>	
<b>Information Security Competence Test with Regards to Password Management</b> .....	72
<i>P. Tarwireyi, S. Flowerday, A. Bayaga</i>	
<b>Secure e-Government Services: Towards A Framework for Integrating IT Security Services into e-Government Maturity Models</b> .....	79
<i>G. Karokola, S. Kowalski, L. Yngstrom</i>	
<b>An Architecture for Secure Searchable Cloud Storage</b> .....	88
<i>R. Koletka, A. Hutchinson</i>	
<b>An Adaptation Of The Awareness Boundary Model Towards Smartphone Security</b> .....	95
<i>S. Allam, S. Flowerday</i>	
<b>Analysing The Fairness Of Trust-Based Mobile Ad Hoc Network Protocols: Comparing The Fairness Of AODV And TAODV Protocols In Scenario Driven Simulations</b> .....	103
<i>I. Burke, R. Heerden, M. Olivier</i>	
<b>Traffic Flow Management in Next Generation Service Provider Networks - Are We There Yet?</b> .....	111
<i>R. Goss, R. Botha</i>	
<b>Exploring the Human Dimension of TETRA</b> .....	117
<i>N. Fouche, K. Thomson</i>	
<b>A Framework for DNS Based Detection and Mitigation of Malware Infections on a Network</b> .....	122
<i>E. Stalmans, B. Irwin</i>	
<b>An Evaluation of Lightweight Classification Methods for Identifying Malicious URLs</b> .....	130
<i>S. Egan, B. Irwin</i>	
<b>cPLC – A Cryptographic Programming Language and Compiler</b> .....	136
<i>E. Bangerter, S. Krenn, M. Seifriz, U. Ultes-Nitsche</i>	
<b>A Property Based Security Risk Analysis Through Weighted Simulation</b> .....	144
<i>T. Winkelvos, C. Rudolph, J. Repp</i>	
<b>Enhancing Digital Business Ecosystem Trust and Reputation with Centrality Measures</b> .....	152
<i>D. Isherwood, M. Coetzee</i>	
<b>Towards a Digital Forensic Readiness Framework for Public Key Infrastructure Systems</b> .....	160
<i>A. Valjarevic, H. Venter</i>	
<b>Adding Digital Forensic Readiness To Electronic Communication Using A Security Monitoring Tool</b> .....	170
<i>F. Staden, H. Venter</i>	
<b>Design Of Cyber Security Awareness Game Utilizing A Social Media Framework</b> .....	175
<i>W. Labuschagne, I. Burke, V. Veerasamy, M. Eloff</i>	
<b>Informed Software Installation through License Agreement Categorization</b> .....	184
<i>A. Borg, M. Boldt, N. Lavesson</i>	
<b>An Assessment Of The Role Of Cultural Factors In Information Security Awareness</b> .....	192
<i>H. Kruger, L. Drevin, S. Flowerday, T. Steyn</i>	

<b>Network Forensics in a Clean-Slate Internet Architecture .....</b>	<b>199</b>
<i>T. Strauss, M. Olivier</i>	
<b>Mobile Cyber-Bullying: A Proposal For A Pre-Emptive Approach To Risk Mitigation By Employing Digital Forensic Readiness .....</b>	<b>204</b>
<i>S. Serra, H. Venter</i>	
<b>Author Index</b>	